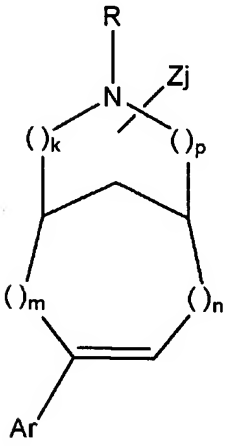
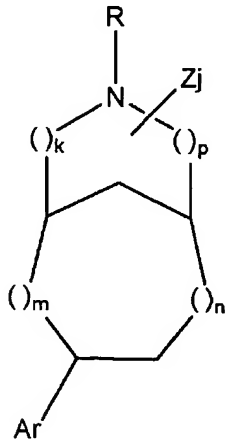
What is claimed is:

[Claim 1] A compound of the general formulas:



Formula 1



Formula 2

wherein k, m, n, and p are individually 0, 1, 2, or 3, provided that, when k + p = 1, m or n or both must be greater than 0;

Ar is a monocyclic or polycyclic heteroaryl ring, optionally substituted at any position with a substituent Z as defined below, with the proviso that in the compounds of Formula 2, when the azabicyclic ring is a 6-azabicyclo[3.2.1]octane, Ar is not pyridine;

wherein Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1, or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including

heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,
R' and R" can combine to form a cyclic functionality,
the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;
R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl,
and the compounds can exist as individual stereoisomers or as mixtures of stereoisomers.

[Claim 2] The compound of Claim 1 wherein Ar is a 5-membered or 6-membered heteroaromatic ring.

[Claim 3] The compound of Claim 1, wherein Ar is pyridinyl, pyrimidinyl, pyrazinyl, pyridazinyl, pyrrolyl, pyrazolyl, thiazolyl, isothiazolyl, triazolyl, oxazolyl, or isoxazolyl.

[Claim 4] The compound of Claim 1, wherein Ar is 3-pyridinyl.

[Claim 5] The compound of Claim 1, wherein Ar is 5-pyrimidinyl.

[Claim 6] The compound of Claim 1, wherein the sum of k + p = 2 and the sum of m + n = 2.

[Claim 7] The compound of Claim 1, wherein the sum of k + p = 1 and the sum of m + n = 2.

[Claim 8] The compound of Claim 1, wherein the sum of k + p = 2 and the sum of m + n = 1.

[Claim 9] The compound of Claim 1, wherein the sum of k + p = 2 and the sum of m + n = 0.

[Claim 10] The compound of Claim 1, wherein the sum of k + p = 1 and the sum of m + n = 1.

[Claim 11] The compound of Claim 1 wherein j is 0 or 1.

[Claim 12] The compound of Claim 1 wherein j is 0.

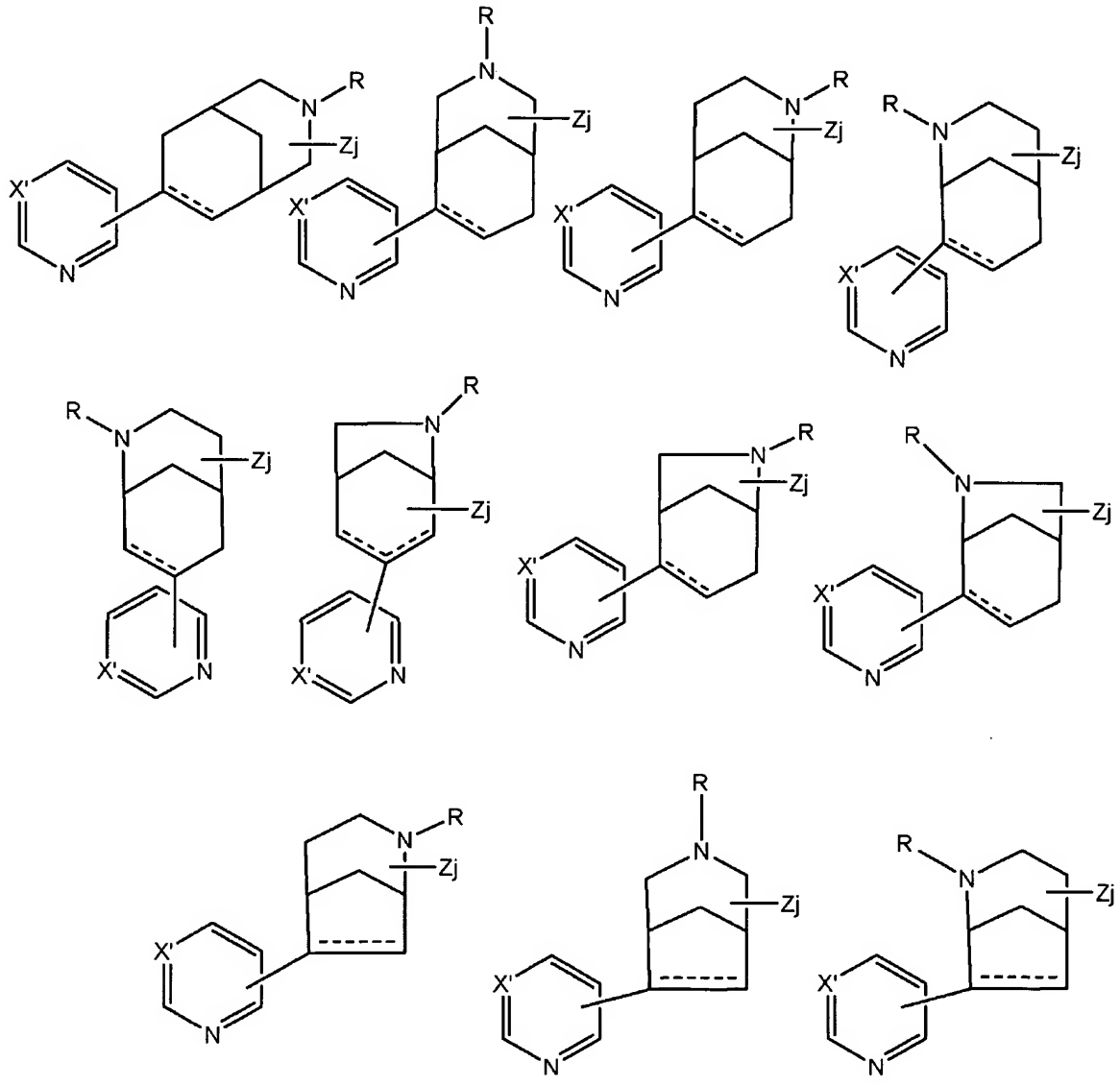
[Claim 13] The compound of Claim 1, comprising an azabicyclo[3.3.1] nonanyl or nonenyl moiety.

[Claim 14] The compound of Claim 1, comprising an azabicyclo[3.2.1] octanyl or octenyl moiety.

[Claim 15] The compound of Claim 1, having a structure as in Formula 2, wherein the carbon at which the azabicyclic ring is attached to the Ar moiety has R stereochemistry.

[Claim 16] The compound of Claim 1, having a structure as in Formula 2, wherein the carbon at which the azabicyclic ring is attached to the Ar moiety has S stereochemistry.

[Claim 17] A compound selected from the group consisting of:



wherein:

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O) NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC$ (=O)R', $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

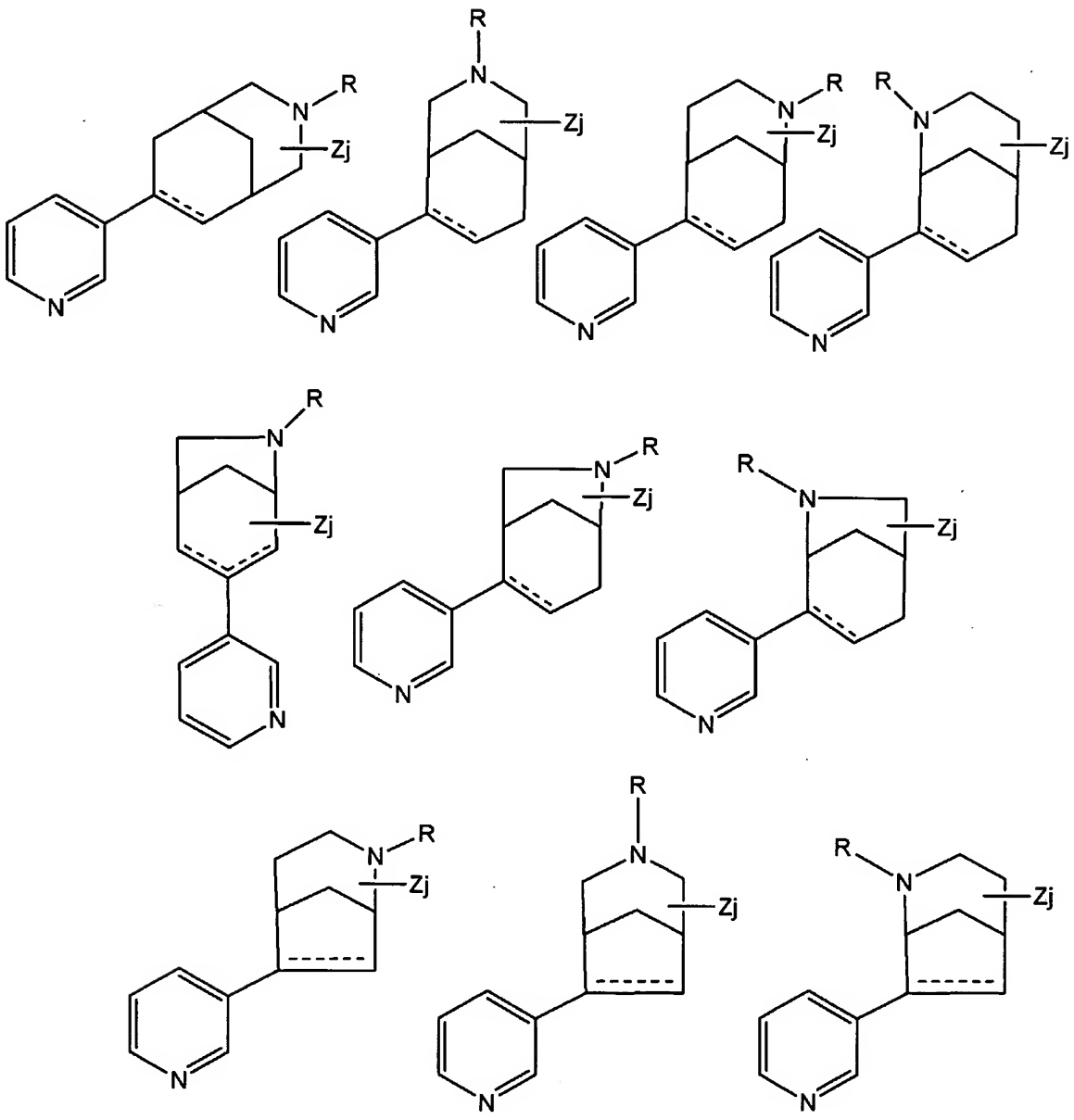
R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

X' is N, or carbon bonded to H or a substituent Z,

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as single stereoisomers or as mixtures of stereoisomers.

[Claim 18] A compound selected from the group consisting of:



wherein:

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl,

heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", -CF_3, -CN, -NO_2, -C_2R', -SR', -N_3, -C(=O) NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', -$O(CR'R")_rC$ (=O)R', -$O(CR'R")_rNR"C(=O)R'$, -$O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", -SO_2R', -$SO_2NR'R"$, and -$NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with -$NR'SO_2R"$;

R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as individual stereoisomers or mixtures of stereoisomers.

[Claim 19] A method of treating a central nervous system disorder comprising the administration to a subject an effective amount of a compound of claim 1.

[Claim 20] The method of Claim 19, wherein in the compound of claim 1, Ar is a 5-membered or 6-membered heteroaromatic ring.

[Claim 21] The method of Claim 19, wherein in the compound of Claim 1, Ar is pyridinyl, pyrimidinyl, pyridazyl, pyrrolyl, pyrazolyl, thiazolyl, isothiazolyl, triazolyl, oxazolyl, or isoxazolyl.

[Claim 22] The method of Claim 19, wherein in the compound of claim 1, Ar is 3-pyridinyl.

[Claim 23] The method of Claim 19, wherein in the compound of claim 1, Ar is 5-pyrimidinyl.

[Claim 24] The method of Claim 19, wherein in the compound of claim 1, the sum of $k + p = 2$ and the sum of $m + n = 2$.

[Claim 25] The method of Claim 19, wherein in the compound of claim 1, the sum of $k + p = 1$ and the sum of $m + n = 2$.

[Claim 26] The method of Claim 19, wherein in the compound of claim 1, the sum of $k + p = 2$ and the sum of $m + n = 1$.

[Claim 27] The method of Claim 19, wherein the sum of $k + p = 2$ and the sum of $m + n = 0$.

[Claim 28] The method of Claim 19, wherein the sum of $k + p = 1$ and the sum of $m + n = 1$.

[Claim 29] The method of Claim 19, wherein in the compound of claim 1, j is 0 or 1.

[Claim 30] The method of Claim 19, wherein in the compound of claim 1, j is 0.

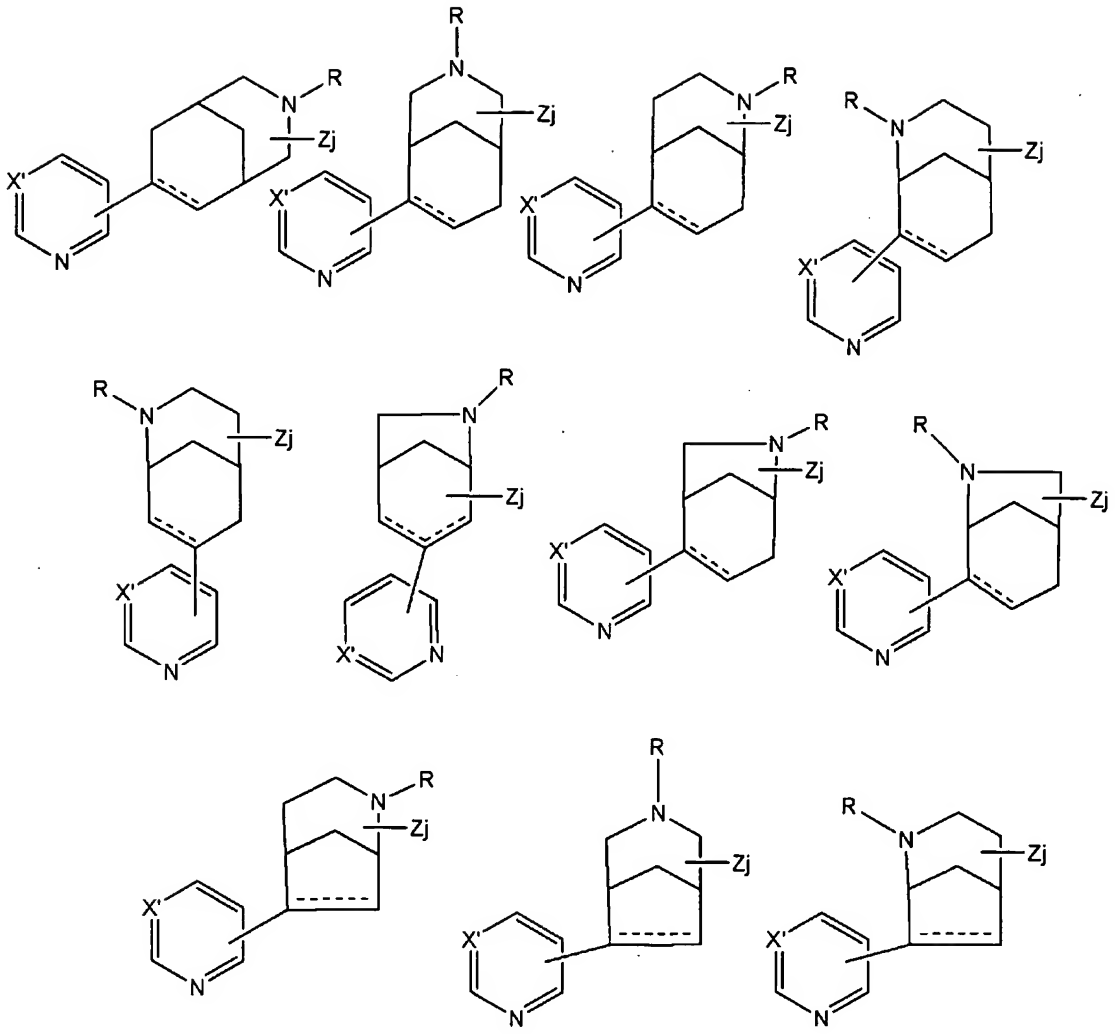
[Claim 31] The method of Claim 19, wherein the compound of claim 1 comprises an azabicyclo[3.3.1] nonanyl or nonenyl moiety.

[Claim 32] The method of Claim 19, wherein the compound of claim 1 comprises an azabicyclo[3.2.1] octanyl or octenyl moiety.

[Claim 33] The method of Claim 19, wherein the compound of claim 1 is of Formula 2, and the carbon at which the azabicyclic ring is attached to the Ar moiety has R stereochemistry.

[Claim 34] The method of Claim 19, wherein the compound of claim 1 is of Formula 2, and the carbon at which the azabicyclic ring is attached to the Ar moiety has S stereochemistry.

[Claim 35] The method of Claim 19, wherein the compound is selected from:



wherein:

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, -

C_2R', -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

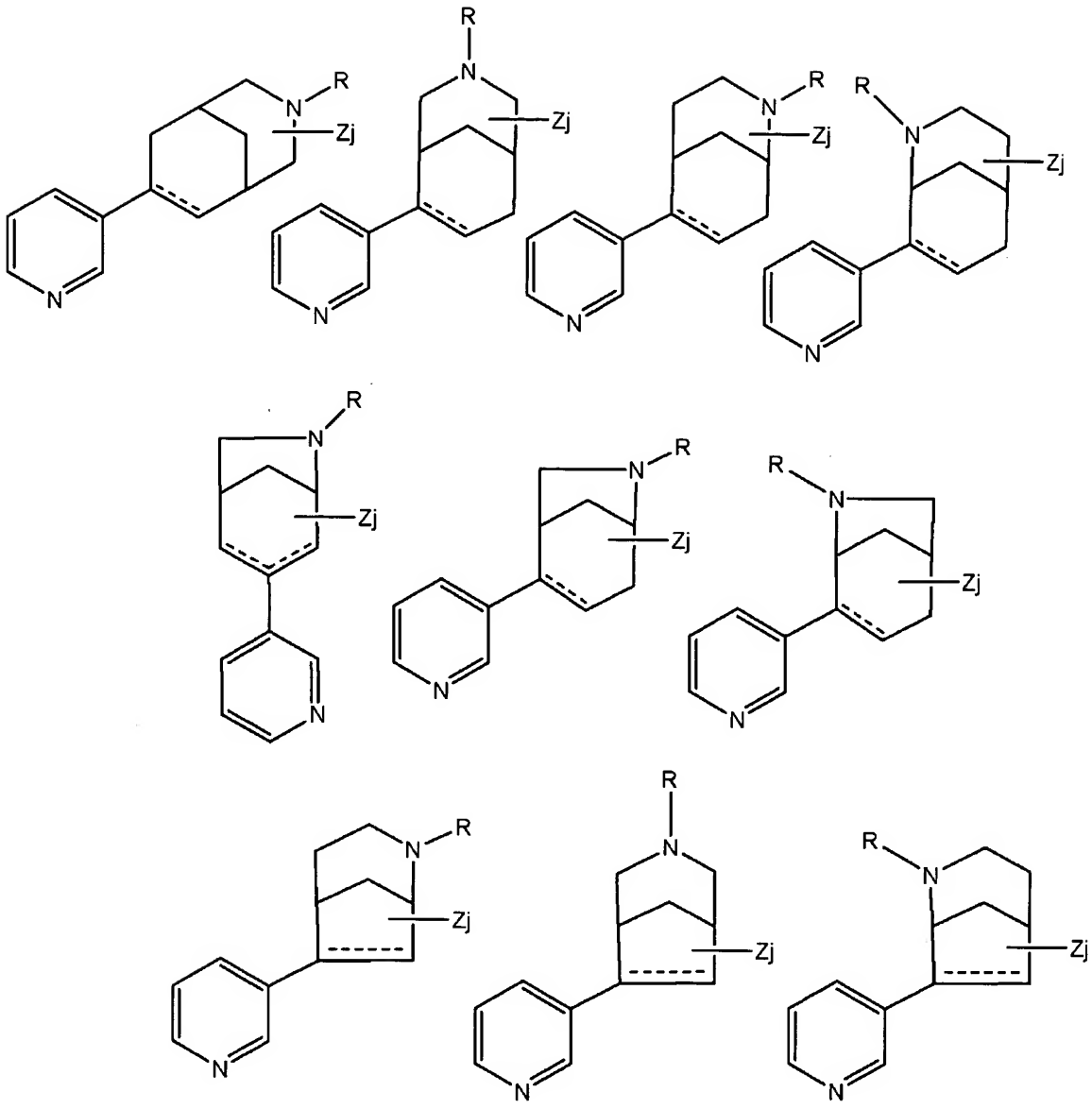
R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl,

X' is N, or carbon bonded to H or a substituent Z,

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as single stereoisomers or as mixtures of stereoisomers.

[Claim 36] The method of Claim 19, wherein the compound is selected from:



wherein

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl),

alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O) NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC$ (=O)R', $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as individual stereoisomers or as mixtures of stereoisomers.

[Claim 37] The method of claim 19, wherein the central nervous system disorder is selected from the group consisting of pre-senile dementia (early-onset Alzheimer's disease), senile dementia (dementia of the Alzheimer's type), micro-infarct dementia, AIDS-related dementia, Creutzfeld-Jakob disease, Pick's disease, Parkinsonism including

Parkinson's disease, Lewy body dementia, progressive supranuclear palsy, Huntington's chorea, tardive dyskinesia, hyperkinesia, mania, attention deficit disorder, anxiety, dyslexia, schizophrenia, depression, obsessive-compulsive disorders and Tourette's syndrome.

[Claim 38] A method for treating pain, preventing tissue damage, providing neuroprotection, and/or controlling angiogenesis, comprising the administration of an effective amount of a compound of Claim 1 to a patient in need of treatment thereof.

[Claim 39] The method of claim 38, wherein the pain is selected from the group consisting of acute pain, persistent pain, neuropathic pain, neurologic pain, chronic pain, and inflammatory pain.

[Claim 40] The method of claim 38, wherein the pain results from an autoimmune disorder, a bacterial or viral infection, a metabolic disorder, a tumor (benign or cancerous), a disease or condition of the circulatory system, organ malfunction, or trauma.

[Claim 41] The method of Claim 38, wherein in the compound of Claim 1, Ar is a 5-membered or 6-membered heteroaromatic ring.

[Claim 42] The method of Claim 38, wherein in the compound of Claim 1, Ar is pyridinyl, pyrimidinyl, pyrazinyl, pyridainzyl, pyrrolyl, pyrazolyl, thiazolyl, isothiazolyl, triazolyl, oxazolyl, or isoxazolyl.

[Claim 43] The method of Claim 38, wherein in the compound of claim 1, Ar is 3-pyridinyl.

[Claim 44] The method of Claim 38, wherein in the compound of claim 1, Ar is 5-pyrimidinyl.

[Claim 45] The method of Claim 38, wherein in the compound of claim 1, the sum of k + p = 2 and the sum of m + n = 2.

[Claim 46] The method of Claim 38, wherein in the compound of claim 1, the sum of k + p = 1 and the sum of m + n = 2.

[Claim 47] The method of Claim 38, wherein in the compound of claim 1, the sum of k + p = 2 and the sum of m + n = 1.

[Claim 48] The method of Claim 38, wherein the sum of k + p = 2 and the sum of m + n = 0.

[Claim 49] The method of Claim 38, wherein the sum of k + p = 1 and the sum of m + n = 1.

[Claim 50] The method of Claim 38, wherein in the compound of claim 1, j is 0 or 1.

[Claim 51] The method of Claim 38, wherein in the compound of claim 1, j is 0.

[Claim 52] The method of Claim 38, wherein the compound of claim 1 comprises an azabicyclo[3.3.1] nonanyl or nonenyl moiety.

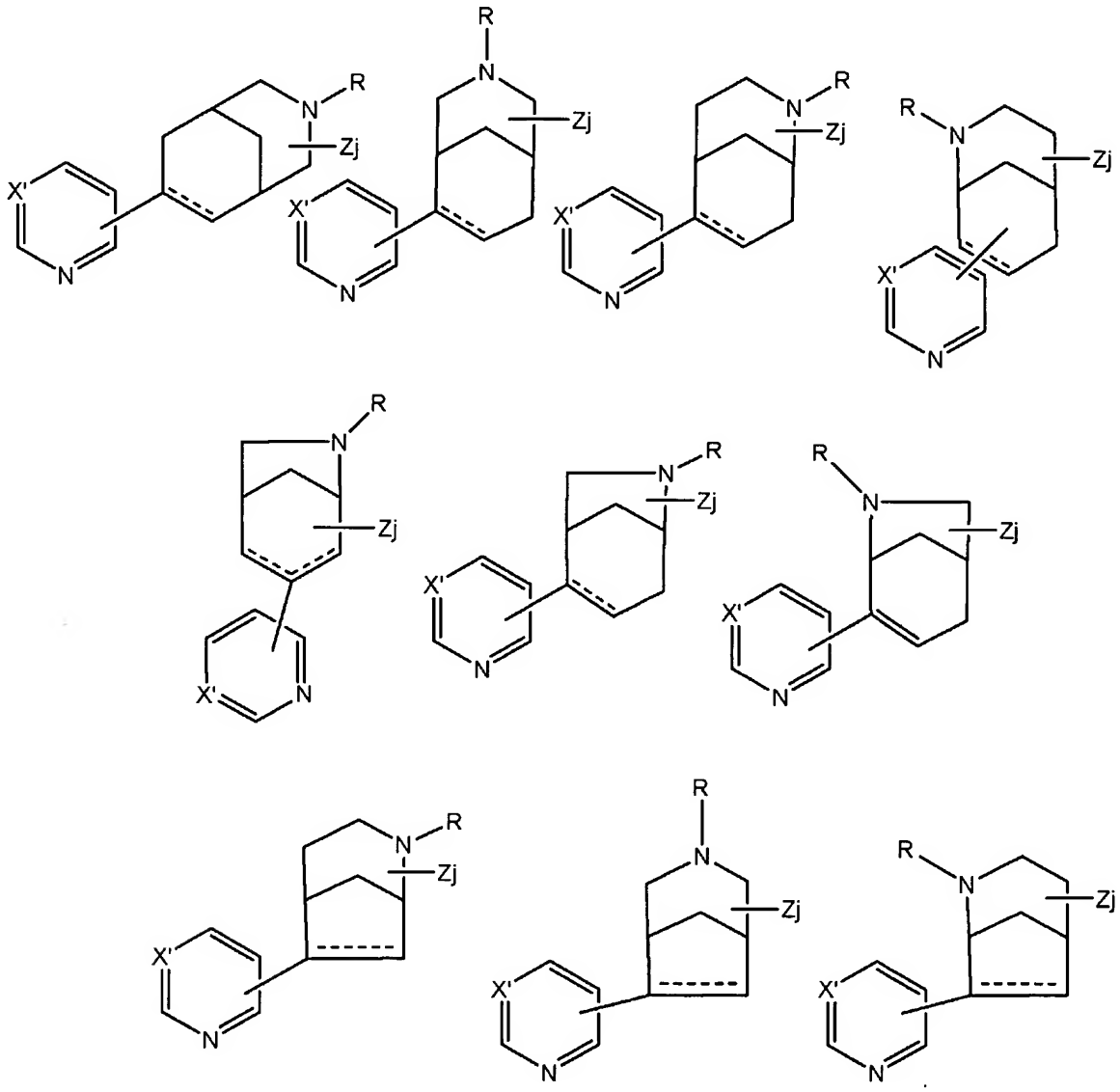
[Claim 53] The method of Claim 38, wherein the compound of claim 1 comprises an azabicyclo[3.2.1] octanyl or octenyl moiety.

[Claim 54] The method of Claim 38, wherein the compound of claim 1 is of Formula 2, and the carbon at which the azabicyclic ring is attached to

the Ar moiety has R stereochemistry.

[Claim 55] The method of Claim 38, wherein the compound of claim 1 is of Formula 2, and the carbon at which the azabicyclic ring is attached to the Ar moiety has S stereochemistry.

[Claim 56] The method of Claim 38, wherein the compound is selected from:



wherein:

Zj refers to j number of Z substituents, which substituents can be

present at any carbon atom on the bicyclic ring,

j is 0, 1, or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O) NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC$ (=O)R', $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

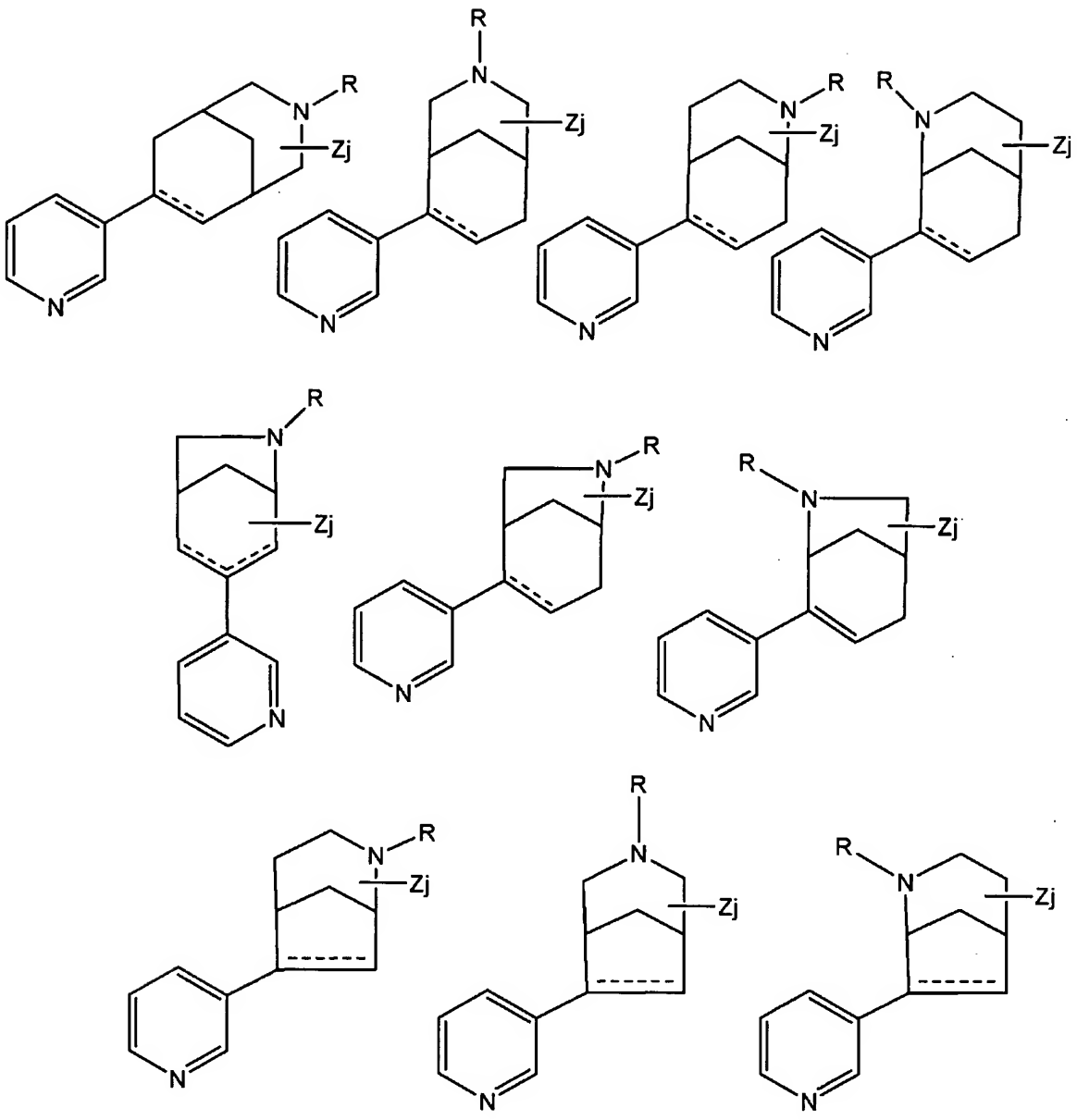
R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

X' is N, or carbon bonded to H or a substituent Z,

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as single stereoisomers or as mixtures of stereoisomers.

[Claim 57] The method of Claim 38, wherein the compound is selected from:



wherein

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl),

alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O) NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC$ (=O)R', $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as individual stereoisomers or mixtures of stereoisomers.

[Claim 58] A method for decreasing inflammation, comprising administering an effective amount of a compound of claim 1.

[Claim 59] The method of claim 58, wherein the inflammation is mediated by cytokine release.

[Claim 60] The method of claim 59, wherein the inflammation results from a

bacterial infection.

[Claim 61] The method of claim 60, wherein the bacterial infection has caused sepsis.

[Claim 62] The method of claim 58, further comprising the co-administration of an antibiotic and/or an antitoxin.

[Claim 63] A method for inhibiting angiogenesis associated with tumor growth, comprising administering an effective amount of a compound of claim 1 to inhibit neovascularization to a patient suffering from tumor growth.

[Claim 64] The method of claim 63, further comprising the co-administration of an antineoplastic agent and/or a VEGF-inhibitor.

[Claim 65] The method of claim 63, wherein the compound is administered locally to a growing tumor or to a capillary bed surrounding a growing tumor.

[Claim 66] A method for inhibiting angiogenesis associated with tumor growth, comprising administering an effective amount of a compound of claim 17 to inhibit neovascularization to a patient suffering from tumor growth.

[Claim 67] The method of claim 66, further comprising the co-administration of an antineoplastic agent and/or a VEGF-inhibitor.

[Claim 68] The method of claim 66, wherein the compound is administered locally to a growing tumor or to a capillary bed surrounding a growing tumor.

[Claim 69] A method for treating ischemia, comprising administering an effective amount of a compound of claim 1 to enhance vascularization of ischemic tissue.

[Claim 70] A pharmaceutical composition comprising:

a) a compound of Claim 1,

b) an antineoplastic agent and/or a VEGF-inhibitor, and

c) a pharmaceutically acceptable carrier.

[Claim 71] A method for inhibiting α7 mediated cytokine release comprising administering a compound of Claim 1 to a patient in need of normalization of cytokine levels.

[Claim 72] A method for treating drug addiction, nicotine addiction, and/or obesity, comprising administering an effective amount of a compound of Claim 1 to a patient in need of treatment thereof.